CLAIMS

What is claimed is:

1. Method for applying a vibration damping layer to a heat shield, comprising:

locating regions of the heat shield with maximum resonance vibrations; and

applying a porous coating of Al-Si onto the heat shield in the located regions, the coating providing the vibration damping layer.

2. The method of claim 1, wherein the locating includes identifying the regions with a laser vibration scan.

3. The method of claim 1, wherein the locating includes identifying the regions with computer aided engineering vibration analysis.

4. The method of claim 1, wherein the composition of the Al-Si is in the range of about Al-Si 4% to Al-Si 18%.

5. The method of claim 1, wherein the composition of the Al-Si is about Al-Si 12%.

6. The method of claim 1, wherein the heat shield is made of stainless steel.

7. The method of claim 1, wherein the applying includes spraying the Al-Si coating with a thermal spray process.

8. A heat shield for a catalytic converter, comprising:

a substrate; and

a coating made from Al-Si applied to the substrate to form an mechanical bond between the substrate and the coating, the coating providing a damping layer to reduce the peak resonances of the heat shield.

9. The heat shield of claim 9, wherein the substrate is made of stainless steel.

10. The heat shield of claim 9, wherein the coating is made from a eutectic Al-Si composition in the range of about Al-Si 4% to Al-Si 18 %.

12. The heat shield of claim 10, wherein the Al-Si composition is about Al-Si12%.